

# CURRENT LINE

DAR STATEWIDE PROJECT QUARTERLY INFORMATION NEWSLETTER

VOLUME 1, NUMBER 2, April 1997

## MAHALO!

We would like to extend a BIG MAHALO to all of you for the overwhelming support we've received for the first issue of the 'Current Line'. We're happy that you've found the information interesting and useful. We'll try to continue to provide you with more interesting information as it becomes available.

However, due to budget limitations, we regret that we will not be able to continue mailing the newsletter to all of you. We will try to make the 'Current Line' available to you statewide through all DAR offices, Fishing Supply Stores, Sporting Goods, State Harbors offices, etc., anywhere that we hope will make the newsletter convenient and available to you. If you know of any place that would like to distribute the 'Current Line', please contact Annette Tagawa at 587-0593 (Oahu) or your local DAR office and let them know WHO & WHERE - we'll do the rest!

Again, MAHALO for all your support!

## LICENSES, RULES & REGULATIONS

### NEW KIHOLU BAY FISHERIES MANAGEMENT AREA



A new Fisheries Management Area was established at Kiholo Bay on the Big Island as of 2/28/97. Boundaries for this area begin at the highwater mark at the shoreline and extend seaward out to an

imaginary line drawn between a sign posted onshore at Hou Point and a sign posted onshore at Nawaikulua Point, including Wainanali'i Pond, but not including Luahinewai Pond.

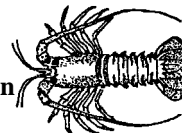
It is unlawful for any person to possess gill nets within the Kiholo Bay Fisheries Management Area. The intent of this ruling is to protect the resident population of sea turtles from becoming entangled in these nets. Apparently a number of turtles congregate in this area. For more information, contact your local DAR office.

### REMINDERS:

**Mullet Season** (for `ama`ama or striped mullet) is now open as of March 1st and will run till November 30th. Remember that minimum size for spear &/or sale is 7 inches.

**Moi & Moi-li'i Season** will be closed between June 1st and August 31st. These animals spawn during the summer months so let's give them a break to help us increase their numbers.

### **Spiny Lobster Season Slipper Lobster Season & Kona Crab Season**



will be closed between May 1st thru August 31st. These animals spawn during this time, so let's give them a chance to breed and multiply.

**Nuuanu Catfish** - remember to put in your application cards for the May 1997 Catfish Opening and renew your freshwater fishing license if you need to. The bag limit is two catfish per angler. Cards should be available around April 1st at the **New DLNR Visitor Center** in the

Kalanimoku Building, Room 131, and other licensing agents.

## FRESHWATER FISHING

### NUUANU RESERVOIR



Maintaining the catfish population at Nuuanu Reservoir for sportfishing was also another project that was cut from our budget. As with the FADs, we were able to restore this project also with Division federal funds through the Research Corporation of the University of Hawaii. This also is temporary and we don't know for how long this situation will continue. In the mean time, here are some stats from the last quarter on what came up from the Reservoir:

### *Nuuanu Reservoir Catfish Openings*

|                     | 70th<br>Open-<br>ing<br>May<br>1996 | 71st<br>Open-<br>ing<br>Aug.<br>1996 | 72nd<br>Open-<br>ing<br>Nov.<br>1996 |
|---------------------|-------------------------------------|--------------------------------------|--------------------------------------|
| # of anglers        | 1,875                               | 1,600                                | 821                                  |
| # of fish           | 663                                 | 358                                  | 127                                  |
| Ave. length         | 15.08 inches                        | 15.35 inches                         | 15.40 inches                         |
| Ave. weight         | 1.74 lbs.                           | 1.82 lbs.                            | 1.61 lbs.                            |
| largest fish caught | 32.5 inches at 27 lbs 7 oz          | 33.0 inches at 22 lbs 8 oz           | 33.0 inches at 22 lbs 4 oz           |

Next opening is May 1997. Remember to put in for your lottery date by filling out the application cards.

## WAHIAWA RESERVOIR



Guess what? THEY'RE BACK! Did any of you fishermen see the Reservoir lately? The Wahiawa Public Fishing Area is overrun by the decorative floating aquatic plant known as water hyacinth. Used by aquarium and fish pond enthusiasts, this plant has an extraordinarily high growth rate (surface area of the plant increases 15% daily!) especially in the warm, nutrient-rich waters of the reservoir.

In the early 1960's, water hyacinth grew out of control and completely covered the reservoir. It was necessary to quickly remove these plants because if water hyacinths completely cover the reservoir, it can cause a massive fish kill and block boat passages. Deja vu? DAR is AGAIN trying to control the water hyacinth by spraying them with herbicide (approved by EPA for use in the aquatic environment) and physically removing the plants.

If you see water hyacinths or any other floating aquatic plants in the reservoir when you go fishing, please help us by removing them or call DAR at 587-0100.

## KAUAI TROUT FISHING



The Kokee Public Fishing Area includes certain streams, reservoirs and ditches in the Kokee State Park on Kauai. However, trout stocking is limited to the Puu Lua Reservoir and irrigation system areas.

Again, due to recent budget cuts, maintaining the trout population at Puu Lua Reservoir for sportfishing was another project that was cut from our budget. We were able to restore the project which is now entirely funded with federal monies. In order to receive federal money, we need to have a certain amount in state dollars which would normally be matched at 3 federal dollars to each state dollar. Unfortunately, these state dollars were a part of our budget that was cut.

In lieu of state dollars, volunteers donate their time which is equivalent to state dollars that we need to obtain the matching federal funds. So it is through their generosity that we are able to keep this project going. Volunteers help with everything from stocking and feeding to maintaining the trout in the Reservoir. From all of us at DAR, we'd like to extend a BIG MAHALO to all of you who have helped our staff to maintain this project. We very much appreciate the time you've given to this project and we'll try to do all that we can to keep it going. For all you trout fishermen, here are some stats on what came up from the Kokee area during the last 3 years:

### *Kokee PFA Trout Openings*

|                            | 1994<br><i>Open-<br/>ing</i> | 1995<br><i>Open-<br/>ing</i> | 1996<br><i>Open-<br/>ing</i> |
|----------------------------|------------------------------|------------------------------|------------------------------|
| <b># of anglers</b>        | 3,926                        | 5,080                        | 2,911                        |
| <b># of fish</b>           | *1,790                       | **12,880                     | 7,666                        |
| <b>Ave. length</b>         | 15.66 inches                 | **                           | **                           |
| <b>Ave. weight</b>         | 2.17 lbs.                    | **                           | **                           |
| <b>largest fish caught</b> | **                           | **                           | **                           |

*\*Large decrease in trout caught in 1994 due to disposal of diseased trout eggs in 1993*

*\*\* Estimated or no data collected during opening weekend due to budget constraints.*

During the last year, DAR has released 20,000 trout in Puu Lua Reservoir so there are at least 20,000 fish in the Reservoir to be caught! Just a reminder that trout season is coming up in August so remember to renew your freshwater fishing license if you have to. Remember that the bag limit is 7 trout per person per day. Fishing is allowed between the hours of 5:30 am and 6:45 pm.

**A "RAINBOW"  
OPPORTUNITY  
FOR ANGLERS  
WITH DISABILITIES!**



Did you know that there is a terrific opportunity for persons with disabilities

to go fishing for rainbow trout on Kauai? In 1991, the Division of Forestry & Wildlife (DOFAW) Na Ala Hele-Trail Access Program, along with DAR, the Commission for Persons with Disabilities, West Kauai Lions Club, and various groups throughout the community, combined their efforts to provide access for persons with disabilities to fish for rainbow trout in the Kokee Public Fishing Area. A floating 256 square ft. fishing raft (with restraining fence and access ramp) was designed by Mr. Elroy Papke of DOFAW. This fishing raft can be floated to areas in Puu Lua Reservoir that are more productive for fishing and is the **first of its kind** in the State of Hawaii!

A fishing outing can provide an educational, recreational, leisure, as well as an emotional activity for our special needs population. For the person with special needs, they can fulfill their wishes of having a normal life experience of "going fishing". Organizations coordinating such fishing outings usually find that this activity enhances personal self esteem.

Last year the DOE brought students with visual impairments from Oahu and the Big Island on a fishing outing. For some of them fishing was a first time experience. For many of them, it was the first time that they were able to share and prepare "their catch" with family and friends.

Private and state organizations with the responsibility of caring for those with disabilities have already utilized the facility. Know any group who is interested in trying their luck at catching our **FAMOUS KOKEE RAINBOW TROUT?** The use of the raft is available by **APPOINTMENT ONLY**. Users of the raft must qualify under the State and Federal definition of a person with disabilities.

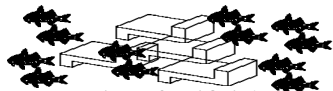
So, in summary, these groups will be able to fish in the more productive, middle areas of the Reservoir and fish any time of the year they want outside of the normal trout fishing season .

Groups or organizations who would like information on organizing a fishing outing for persons with disabilities can con-

tact Wade Ishikawa at : 3060 Eiwa Street, Room 306, Lihue, HI 96766; or call 274-3344. Please give us a call - Happy Fishing!

## INSHORE PROJECTS

### EXPANDED ARTIFICIAL REEF



A new section of artificial reef was added to the Waianae Artificial Reef in February. Z - shaped modules were placed in the area where normal ocean currents will link them together. The artificial reef will now cover a total of about two acres with these new additions.

Previously, the reef system was made of concrete pipes which was destroyed by Hurricane Iniki. Fish counts in the area were going down because the pipes had moved. Adding the Z-shaped modules in 1995 increased the amount of fish, but lately, the fish counts have begun to drop again. This may be due to normal fluctuations in the population as well as heavy fishing in the area. Hopefully the fish counts will increase with the added structures. Stay tune for future updates.

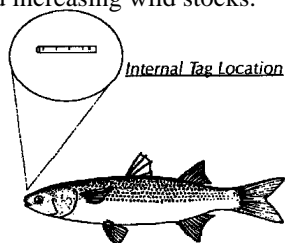
### BIG ISLAND FISH STOCK ENHANCEMENT

The State of Hawaii Division of Aquatic Resources' Stock Enhancement of Marine Fish in the State of Hawaii (DAR-SEMFISH) Project goal is to restore depleted populations of local coastal fish species to improve the quality of fishing. The SEMFISH project is testing the use of aquaculture to increase and sustain Hawaii's near shore fish populations. Hilo was selected as the experimental site because it has the ideal area and habitat.

Spawning, egg hatching, and larval rearing occur on Oahu at The Oceanic Institute and the DAR Anuenue Fisheries Research Center. The small postlarvae are then shipped to the Big Island where they are grown to a size of two inches to four inches. The mullet juveniles are then tagged and released in the Hilo area. Fish survival, growth, and movements are then monitored.

Currently the project is preparing to release a batch of approximately 30,000 striped mullet juveniles. An additional 30,000 to 50,000 fish will be in the Hilo Station by March or April 1997. Tagging of this new batch is projected to occur in June - November 1997, dependant on fish growth.

The 1997 experiments will focus on carrying capacity in the Wailoa River Estuary in Hilo and how release season affects the survival of released fish. Small magnetic wire tags containing a code are located in the **snout of the mullet**. If we find a tagged fish, we will ask for the head so the tag can be removed and decoded. Tags recovered will confirm that released fish are reaching adult size, being caught by fishermen, and contributing to the fishery. We can also assume that the tagged fish are spawning and increasing wild stocks.



We appreciate and need the continued support and cooperation of local fishermen to examine their catches for tagged mullet. Please help us by calling us if you've caught a mullet in this area. To have your catch sampled for tagged fish, please contact:

**DAR - SEMFISH**  
Hilo Office  
1266 Kamehameha Avenue  
Hilo, Hawaii 96720  
Phone/Fax: 935-8998

If we can show that SEMFISH releases are successful, this technology can be used Statewide to enhance mullet and other native fish stocks in Hawaii - wouldn't that be GREAT?! SEMFISH researchers are now developing a stock enhancement program for moi.

### WAIKIKI-DIAMOND HEAD FISHERY MANAGEMENT AREA

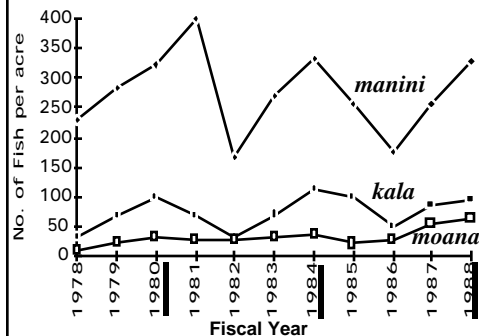
A form of fisheries management was practiced in ancient Hawaii that was based on the old "kapu" system in which people were allowed to fish for certain species only during certain times of the

year. By allowing time periods in which fishing wasn't allowed or "kapu", this provided the fish a "rest" from fishing pressure and some time to grow and reproduce in numbers and sizes. This idea was modified to the present day Kapuku Management Plan where open and closed periods to fishing are applied to entire habitats instead of individual fish species. 'Kapuku' in Hawaiian means "to restore life".

This "kapuku" management plan is the basis for creating the Waikiki Diamond Head Shoreline Fisheries Management Area (WDHSFMA) to see if applying this concept of periodically opening and closing shoreline areas for fishing would work to restore marine life and improve fishing opportunities.

The original schedule established for the open and closed fishing cycle/season was a four-year cycle in which the area would be closed to ALL methods of fishing during the first two years, the third year would be open to pole & line, rod & reel, and hand harvesting methods ONLY, and the fourth year would be open to ALL fishing methods including nets and spears. In the fifth year, the cycle would then be repeated.

Beginning in 1978 (Fiscal Year 1979), DAR staff monitored fish stocks during the open- and closed-to-fishing seasons by conducting fish counts on a regular basis. The following chart shows data from the fish counts of three species commonly found in the area (manini, kala & moana) and what happened to their numbers during the open and closed cycles:



As you can see, the highest counts occur during the end of the closed seasons (Fiscal Years '80, '84, & '88). When the area was opened to fishing the first year, fish populations dropped very little or hardly at all. During the following year when it was opened to all fishing methods, you

can see the dramatic peak lows of the decrease in fish population counts. In conducting surveys of fishermen in the area, it was found that nets (the most efficient fishing method) were used in large fish catches and this is what contributes to the decrease in fish populations during the last year of each cycle.

You can see from the data that fish populations recover sufficiently after a year's closure to permit fishing. However, certain fishing methods (especially gill nets and night spearing) result in a more rapid decrease in fish populations. As a result, the open- and closed-to-fishing cycles were modified to 1-year-open- and 1-year-closed-to-fishing cycles. WDHSFMA is currently **open to fishing ONLY during even-numbered calendar years, and closed during odd-numbered years**. Fishing nets (other than thrownets) and night spearing are prohibited during the open season.

## OFFSHORE PROJECTS

### FAD PROJECT

FADs were replaced in the Maui and Hawaii county areas during the month of February. 'HH' FAD and the light pack for 'BO' FAD were replaced in early March. The deployment cruise for Oahu and Kauai counties is scheduled for mid-March. The deployment cruise for Maui and Hawaii counties is tentatively scheduled for April 1997. Here is the most recent update of missing FADs and replaced FADs:

Missing FADs (as of 3/15/97):

| FAD | Location     | Island   |
|-----|--------------|----------|
| UU  | ʻĀpua Pt.    | Hawaiʻi  |
| QQ  | Makuu        | Hawaiʻi  |
| T   | Makapuu      | Oʻahu    |
| U   | Kaneohe      | Oʻahu    |
| X   | Kahuku       | Oahu     |
| MM  | Mokapu Point | Oʻahu    |
| NL  | Nuʻu Landing | Maui     |
| N   | Cape Hālawā  | Molokaʻi |
| EK  | Hanalei      | Kauaʻi   |
| Z   | Kipukai      | Kauaʻi   |

Replaced FADs: (as of 3/15/97)

| FAD | Location       | Island     |
|-----|----------------|------------|
| SS  | Apua Pt.       | Hawaiʻi    |
| RN  | Palima Pt.     | Hawaiʻi    |
| I   | Halona Pt.     | Kahoʻolawe |
| M   | Hana Bay       | Maui       |
| FF  | Pukaulua Point | Maui       |
| HH  | Pearl Harbor   | Oʻahu      |

For current locations and/or more information, contact Warren Cortez at 848-2939. Also, if you know of any FADs that broke loose, see that any light is out or have any other comments, please give Warren a call.

### FAD LANDINGS

During the past fiscal year (7/95 to 6/96), commercial fishers reported a total of 8,748 fishing trips (including 'zero' catch trips) to 52 State maintained FADs. A total of 785,514 pounds of fish were caught. For more detailed information on each FAD, see attached.

All landing data used for the following tables are derived from commercial fish catch reports only. Figures are compiled by the DAR Statistical Unit. Summaries are based on Fiscal Year 1996.

Top 10 Frequently Fished Buoys Statewide  
Catch Report Summary  
(Ranking by Total Trips Reported)

| Rank | Buoy | Average trips per month reported | Island  |
|------|------|----------------------------------|---------|
| 1    | C    | 77                               | Hawaiʻi |
| 2    | R    | 43.7                             | Oʻahu   |
| 3    | E    | 40.8                             | Hawaiʻi |
| 4    | F    | 38.2                             | Hawaiʻi |
| 5    | S    | 36                               | Oʻahu   |
| 6    | K    | 35                               | Lanaʻi  |
| 7    | VV   | 32.3                             | Hawaiʻi |
| 8    | V    | 31.2                             | Oʻahu   |
| 9    | AA   | 26.6                             | Kauaʻi  |
| 10   | X    | 24.1                             | Oʻahu   |

Top 10 Productive Buoys Statewide  
Catch Report Summary  
(Ranking by Ave. Lbs. per Trip Reported)

| Rank | Buoy      | Average pounds caught per trip | Island         |
|------|-----------|--------------------------------|----------------|
| 1    | SS        | 324.7                          | Hawaiʻi        |
| 2    | RN        | 292.61                         | Hawaiʻi        |
| 3    | A         | 263.77                         | Hawaiʻi        |
| 4    | KH        | 244.48                         | Hawaiʻi        |
| 5    | X         | 210.77                         | Oʻahu          |
| 6    | KK        | 158.03                         | Kauaʻi         |
| 7    | T         | 151.14                         | Oʻahu          |
| 8    | CC        | 130.25                         | Lanaʻi         |
| 9    | Mid-water | 124.36                         | Palaoa, Lanaʻi |
| 10   | BO        | 124.12                         | Oʻahu          |

As you can see, the average number of trips reported per month to each buoy appears to be **low**. In order to justify keeping any particular FAD, as well as the FAD project in general, we need to show and have proof that the FADs are being utilized.

The only way we have of telling how well the FADs are doing is through the commercial fish catch reports. Please help us keep the FAD project going by turning in those catch reports, especially if you've been fishing around the FADs. Please report the following information, as it applies, in your fish catch reports:

1. All trips made but no fish caught. ('ZERO' catch trips)
2. All fish caught and used for bait such as small aku
3. All other fish caught, but not sold
4. List each species separately
5. List each fishing method used

Let's keep showing the state that the FAD project is important to us and that we'd like to keep it! Please help us by reporting the above information any time you fish at the FADs and we'll keep you up to date on how the project is going. Future editions of the 'Current Line' will feature updated and additional FAD landing information. For further information about commercial FAD landings, contact the Statistical Unit at (808) 587-0108.

COMMERCIAL MARINE FAD (State maintained only) LANDINGS  
for Fiscal Year 1996 (July 1995 to June 1996)  
State of Hawaii

| Island      | FAD       | Location      | Months<br>on<br>Station | Trips          |              | Lbs.          |              | Lbs.        |      |
|-------------|-----------|---------------|-------------------------|----------------|--------------|---------------|--------------|-------------|------|
|             |           |               |                         | Total<br>Trips | Per<br>Month | Total<br>Lbs. | Per<br>Month | Per<br>Trip | Rank |
| HAWAII      | C         | Loa Pt.       | 12.0                    | 926            | 77.2         | 83,226        | 6,935.5      | 89.9        | 9    |
|             | E         | Lelewi        | 12.0                    | 490            | 40.8         | 48,803        | 4,066.9      | 99.6        | 6    |
|             | F         | Kailua-Kona   | 12.0                    | 458            | 38.2         | 31,856        | 2,654.7      | 69.6        | 11   |
|             | KH        | Kahena        | 12.0                    | 120            | 10.0         | 29,337        | 2,444.8      | 244.5       | 4    |
|             | VV        | Kahaluu       | 12.0                    | 388            | 32.3         | 24,688        | 2,057.3      | 63.6        | 12   |
|             | XX        | Puako         | 12.0                    | 194            | 16.2         | 18,051        | 1,504.3      | 93.0        | 7    |
|             | G         | Pepeekeo      | 7.9                     | 176            | 22.3         | 17,727        | 2,243.9      | 100.7       | 5    |
|             | RN        | Palima Pt.    | 9.9                     | 50             | 5.1          | 14,634        | 1,478.2      | 292.7       | 2    |
|             | SS        | Apua Pt.      | 12.0                    | 40             | 3.3          | 12,988        | 1,082.3      | 324.7       | 1    |
|             | D         | Kumukahi      | 12.0                    | 130            | 10.8         | 12,084        | 1,007.0      | 93.0        | 8    |
|             | B         | Milolii       | 12.0                    | 164            | 13.7         | 9,206         | 767.2        | 56.1        | 13   |
|             | OTEC      | Waikoloa Pt.  | 12.0                    | 114            | 9.5          | 8,771         | 730.9        | 76.9        | 10   |
|             | A         | South Pt.     | 12.0                    | 22             | 1.8          | 5,803         | 483.6        | 263.8       | 3    |
|             | UU        | Auau Pt.      | 9.9                     | 48             | 4.8          | 2,401         | 242.5        | 50.0        | 14   |
|             | TT        | Kanewaa Pt.   | 1.0                     | 22             | 22.0         | 840           | 840.0        | 38.2        | 15   |
| OAHU        | X         | Kahuku        | 12.0                    | 289            | 24.1         | 60,913        | 5,076.1      | 210.8       | 1    |
|             | S         | Pokai Bay     | 11.2                    | 432            | 38.6         | 35,585        | 3,177.2      | 82.4        | 10   |
|             | R         | Makaha        | 12.0                    | 524            | 43.7         | 29,990        | 2,499.2      | 57.2        | 11   |
|             | BO        | Barbers Pt.   | 9.1                     | 213            | 23.4         | 26,438        | 2,905.3      | 124.1       | 3    |
|             | V         | Makua         | 12.0                    | 374            | 31.2         | 18,180        | 1,515.0      | 48.6        | 12   |
|             | II        | Haleiwa       | 12.0                    | 176            | 14.7         | 15,671        | 1,305.9      | 89.0        | 9    |
|             | MM        | Mokapu Pt.    | 12.0                    | 129            | 10.8         | 14,838        | 1,236.5      | 115.0       | 4    |
|             | CO        | Kaena Pt.     | 12.0                    | 126            | 10.5         | 12,518        | 1,043.2      | 99.3        | 6    |
|             | HH        | Pearl Harbor  | 12.0                    | 103            | 8.6          | 9,703         | 808.6        | 94.2        | 8    |
|             | J         | Waialeale     | 4.6                     | 74             | 16.1         | 7,464         | 1,622.6      | 100.9       | 5    |
|             | U         | Kaneohe       | 12.0                    | 121            | 10.1         | 4,462         | 371.8        | 36.9        | 13   |
|             | P         | Penguin Banks | 11.6                    | 36             | 3.1          | 3,458         | 298.1        | 96.1        | 7    |
|             | T         | Makapuu       | 2.0                     | 7              | 3.5          | 1,058         | 529.0        | 151.1       | 2    |
|             | LL        | Hauula        | 0.6                     | 1              | 1.7          | 0             | 0.0          | 0.0         | 14   |
| KAUAI       | AA        | Port Allen    | 12.0                    | 319            | 26.6         | 35,885        | 2,990.4      | 112.5       | 2    |
|             | WK        | Wailua        | 12.0                    | 245            | 20.4         | 23,074        | 1,922.8      | 94.2        | 3    |
|             | KK        | Waimea        | 11.4                    | 134            | 11.8         | 21,176        | 1,857.5      | 158.0       | 1    |
|             | PP        | Koloa         | 12.0                    | 213            | 17.8         | 19,194        | 1,599.5      | 90.1        | 4    |
|             | EK        | Hanalei       | 12.0                    | 110            | 9.2          | 6,985         | 582.1        | 63.5        | 5    |
|             | Z         | Kipukai Pt.   | 9.0                     | 73             | 8.1          | 4,423         | 491.4        | 60.6        | 6    |
|             | BB        | Molokaa       | 12.0                    | 48             | 4.0          | 1,674         | 139.5        | 34.9        | 8    |
|             | DK        | Anahola       | 6.2                     | 28             | 4.5          | 1,230         | 198.4        | 43.9        | 7    |
|             | CK        | Makahuena Pt. | 0.6                     | 10             | 16.7         | 234           | 390.0        | 23.4        | 9    |
| MAUI COUNTY | K         | Palaoa        | 12.0                    | 420            | 35.0         | 30,238        | 2,519.8      | 72.0        | 8    |
|             | MC        | Palaoa        | 12.0                    | 220            | 18.3         | 18,756        | 1,563.0      | 85.3        | 5    |
|             | Q         | Pauwela Pt.   | 12.0                    | 189            | 15.8         | 16,075        | 1,339.6      | 85.1        | 6    |
|             | Mid-water | Palaoa        | 12.0                    | 86             | 7.2          | 10,695        | 891.3        | 124.4       | 2    |
|             | N         | Cape Halawa   | 12.0                    | 94             | 7.8          | 8,749         | 729.1        | 93.1        | 4    |
|             | HO        | Hoolawa Pt.   | 8.0                     | 102            | 12.8         | 6,602         | 825.3        | 64.7        | 10   |
|             | LA        | Lahaina       | 5.4                     | 244            | 45.2         | 5,080         | 940.7        | 20.8        | 13   |
|             | FF        | Pukaulua Pt.  | 12.0                    | 37             | 3.1          | 3,836         | 319.7        | 103.7       | 3    |
|             | M         | Hana Bay      | 12.0                    | 54             | 4.5          | 3,769         | 314.1        | 69.8        | 9    |
|             | NL        | Nuu Landing   | 12.0                    | 31             | 2.6          | 2,407         | 200.6        | 77.6        | 7    |
|             | I         | Halona Pt.    | 9.7                     | 82             | 8.5          | 2,291         | 236.2        | 27.9        | 12   |
|             | DD        | Opana Pt.     | 1.8                     | 36             | 20.0         | 1,153         | 640.6        | 32.0        | 11   |
|             | CC        | Kaena Pt.     | 0.5                     | 8              | 16.0         | 1,042         | 2,084.0      | 130.3       | 1    |
|             | JJ        | Kamohio       | 5.4                     | 18             | 3.3          | 253           | 46.9         | 14.1        | 14   |
| STATE TOTAL |           |               |                         | 8,748          |              | 785,514       |              | 89.8        |      |

Source: Division of Aquatic Resources, DLNR, State of Hawaii  
For additional information, contact the Statistical Unit at (808) 587-0108